

Appl. No. 09/915,865
Amdt. Dated January 30, 2006
Reply to Office Action of November 30, 2005

Attorney Docket No. 2009-174 (81841.0155)
Customer No. 26021

REMARKS/ARGUMENTS:

Claims 7, 8, and 10-14 are pending in the application. Reexamination and reconsideration of the application, in view of the following remarks, are respectfully requested.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103:

Claims 7, 8, and 10-14 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Layne et al. (U.S. Patent No. 5,968,731 A) in view of Ozawa et al. (U.S. Patent No. 5,988,857 A). The Applicant respectfully traverses this rejection.

Claim 7 is as follows:

An apparatus for mechanical control of an automated immunochemistry or chemistry instrument which has a multiplicity of subsystems for performing immunochemistry or chemistry assays, the apparatus for mechanical control comprising:

a mechanical control system having both object-orient features and real-time features for control of the operations of the multiplicity of subsystems; wherein the subsystems operate on, transform, or transfer passengers; wherein said mechanical control system comprises a scheduler configured for determining the times when one or more sets of operations of said multiplicity of subsystems must be executed; wherein said scheduler is configured for determining whether said multiplicity of subsystems is available for performing said immunochemistry or chemistry assays; and

a passenger template base class comprising facilities configured for passenger creation, destruction, enumeration and state recovery.

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The Applicant respectfully submits that Layne and Ozawa cannot render claim 7 obvious because the cited references fail to teach or suggest a scheduler configured for determining the times when one or more sets of operations of the multiplicity of subsystems must be executed; and for determining whether said multiplicity of subsystems is available for performing the immunochemistry or chemistry assays.

The Examiner states,

"Regarding the new amendment to claim 7, Layne does further teach the incorporation of a scheduling feature, e.g., sequence task controllers (136) (see col. 9, line 40-col. 10, line 17). Hence the apparatus taught by Layne and Ozawa is functionally capable of being used in the claimed matter. A recitation of the intended use of the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art is capable of performing the intended use, then it meets the claim."

The Applicant respectfully disagrees. The "configured for" language in claim 7 imposes a structural limitation on the scheduler and therefore, is more than an "intended use". Consequently, the scheduler's ability to determine when one or more sets of operations of the multiplicity of subsystems must be executed; and whether the multiplicity of subsystems is available for performing the immunochemistry or chemistry assays is a structural limitation that distinguishes the present invention from the cited prior art.

Layne very broadly teaches,

"Task sequence controllers (TSCS) 136 are intermediate level devices which use tools from operations research to govern intricate flows of supplies and samples through automated instruments." (Layne, column 9, lines 41-45).

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There is no teaching or suggestion in Layne that the sequence controllers determine when one or more sets of operations of the multiplicity of subsystems must be executed. Furthermore, Layne has no teaching or suggestion that the sequence controllers determine whether any subsystems are available for performing immunochemistry or chemistry assays. The Applicant respectfully submits that the sequence controllers taught by Layne fail to teach or suggest the planning and availability capabilities of the present invention.

Ozawa cannot remedy the defect of Layne and is not relied upon by the Examiner for such. Instead, the Examiner cites Ozawa for teaching an automatic processing system, which utilizes object-oriented and real-time features, for the control of the operations of a multiplicity of subsystems (i.e., processing systems).

It is an aspect of the present invention that the scheduler determines that all the resources that a test needs are free when the test needs them. A test can be run if and only if all resources needed by the test may be reserved at the times that the test requires them. With the exception of supply resources, it is always possible to schedule a test if we look far enough into the future. (Applicant's specification, at page 23, lines 11-13). Once the scheduler determines that all the resources that a test needs are free when the test needs them, the Route object is constructed based on the resources that are reserved. If all the resources are not available when they are needed, the scheduler tries again, looking farther into the future. After the route is constructed, the actions are sent to the sequencer. (Applicant's specification, at page 23, lines 14-18).

It is another aspect of the present invention that there are two principal data structures maintained by the scheduler. The test request queue is a priority ordered list of RV's (reaction vessel). This list is modified whenever the Console sends test request messages to the AU (analytical unit). Whenever it is possible to run a new test, the scheduler searches the list, in priority order, for a runnable test.

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When found, the test route, recipe, and action sequence is determined. The route and recipe are written to the RV object, and the action list is sent to the sequencer, and associated with the RV identification. (Applicant's specification, at page 20, lines 21-27).

The other important data structure is the "Resource Usage Table". For every important resource the scheduler maintains a list of reservation times that indicate when the resource is busy. As an example, Incubate Wheel slot #1 is a resource that is marked as busy whenever an RV is planned to occupy that position. Each test request is converted into a timed list of resource reservations. Start times and order of testing are adjusted for no collisions of resource usage and maximal use of resources. This results in the maximum throughput. Resources are used to plan the RV's route through the AU and to coordinate subsystem actions. (Applicant's specification, at page 20, line 28-page 21, line 8).

In contrast, Layne and Ozawa do not offer the planning capabilities of the present invention because Layne and Ozawa fail to teach or suggest a scheduler that can track resources and schedule tests based on the availability of those resources.

In light of the foregoing, Applicant respectfully submits that the cited references could not have rendered obvious claim 7, because the cited references fail to teach or suggest each and every claim limitation. Claims 8 and 10-14 depend from claim 7 and cannot be rendered obvious for at least the same reasons as claim 7. Withdrawal of these rejections is thus respectfully requested.

In view of the foregoing, it is respectfully submitted that the application is in condition for allowance. Reexamination and reconsideration of the application, in view of the foregoing remarks, are requested.

If for any reason the Examiner finds the application other than in condition for allowance, the Examiner is requested to call the undersigned attorney at the Los

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Angeles, California telephone number (310) 785-4674 to discuss the steps necessary for placing the application in condition for allowance.

If there are any fees due in connection with the filing of this response, please charge the fees to our Deposit Account No. 50-1314.

Respectfully submitted,

HOGAN & HARTSON L.L.P.

Date: January 30, 2006

By: Barry M. Shuman
Wei-King Yang (Contact Person)
Registration No. 38,690
Attorney for Applicant(s)
Barry M. Shuman
Registration No. 50,220

500 South Grand Avenue, Suite 1900
Los Angeles, California 90071
Phone: 213-337-6700
Fax: 213-337-6701